

89534

S/044/60/000/008/006/035  
C111/C222

On distributive quasigroups

the binary relation  $a \sim b$ ; it means that  $b$  is a solution of (1). It is proved that this relation is a congruence. This fact permits to obtain a theorem being dual to the above mentioned theorem on the solutions of (1): Solutions of (1), where  $f_1$  and  $f_2$  are polynomials of an arbitrary degree, while  $a$  appears in them not more than one time each, form a subquasigroup. Finally it is shown that a finite distributive quasigroup either is commutative or is obtained from a commutative distributive quasigroup with the aid of a finite number of extensions by anticommutative distributive quasigroups (the quasigroup is commutative if  $ab = ba$  holds only for  $b = a$ ). ✓

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

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21483

9,7000 (also 1034)  
16.6800

S/020/61/137/004/008/031  
B104/B206

AUTHOR: Sorkin, Yu. I.

TITLE: The algorithmic solution of isomorphism problems for automatic machines

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 4, 1961, 804-806

TEXT: It is assumed that  $\Lambda$  is an arbitrary quantity, the elements of which are designated as inner conditions of a partial apparatus. It is also assumed that a further quantity  $\mathcal{Q}$  exists, the elements of which are designated as inputs. It is assumed that both quantities are not empty and do not intersect. To each input  $a \in \mathcal{Q}$  a subset  $\Lambda_a$  in  $\Lambda$  is ascribed, which is designated as support of  $a$ . It is also assumed that each  $a$  in  $\mathcal{Q}$  is the representation of its support  $\Lambda_a$  in  $\Lambda$ , i.e.  $\lambda a \Lambda$  holds for an arbitrary  $a \in \mathcal{Q}$  and  $\lambda \in \Lambda_a$ . The partial automatic machine  $\Lambda(\mathcal{Q})$  becomes a total apparatus if  $\Lambda_a = \Lambda$  holds in general. The definition of an apparatus formulated here agrees with that by Mur and Medvedev (Ref. 1: E. F. Mur, Avtomaty, M., 1956, p. 179; Ref 2: Yu. T. Medvedev, Avtomaty, M., 1956,

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p. 385). Starting from these definitions, the following theorems are proved: Theorem A: Each automatic counting device  $\Lambda(Q)$  with at least one input is isomorphic to a sub-device of any automatic machine with a producing condition and the same quantity  $Q$  of inputs. Theorem B: In an automatic machine  $\Lambda(Q)$ , given by a closed system of defined correlations, two arbitrary words  $A$  and  $B$  are equal, if their canonical representation is graphically equal. Theorem C: The basis  $K_{\Lambda(Q)}$  of each partial automatic machine  $\Lambda(Q)$  with a finite number of producing elements and inputs is a system of the producing elements. Theorem D: Each automatic machine  $\Lambda(Q)$  with a finite number of producing conditions and inputs is a free enlargement of its basis. Theorem E: If an automatic machine is given by a closed system of defined correlations which connect the producing conditions  $s_1$ , each word  $A$ , the canonical representation of which differs from the  $s_1$ , is an eliminated condition. Theorem F: If a partial automatic machine  $\Lambda(Q)$  eliminates a certain set of eliminated conditions  $N$  and all conditions produced by  $\{N\}$ , then each condition  $s$ , eliminated or not eliminated, remains in the partial automatic machine  $\Lambda(Q)$  in strict conformity as to whether the condition is eliminated or

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not eliminated in the partial automatic machine  $\Lambda(U)$ . On the basis of these theorems, the author constructs an algorithm for the solution of problems of isomorphism: 1) Representation of all important automatic machines as a closed system of defined correlations. 2) Symbols of graphs for the transients  $\Gamma_1$  and  $\Gamma_2$  of the partial automatic machines for both automatic machines, which are built up only from producing conditions (coupled closed system of defined correlations). 3) It is ascertained for each condition in  $\Gamma_1$  and  $\Gamma_2$ , whether it is eliminated or not and all eliminated conditions are eliminated from  $\Gamma_1$  and  $\Gamma_2$ , i.e. only the bases of the two automatic machines remain. 4) If all possible representations of the bases are studied and intercompared, it can be established whether they are isomorphic or not. From the above-mentioned data the author derives a further theorem: Theorem G: Each defined finite automatic machine possesses a finite automorphism group, the Cayley tabula of which can be found algorithmically. There are 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

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S/020/61/137/004/008/031  
B104/B206

The algorithmic solution of...

ASSOCIATION: Gosudarstvennyy vsesoyuznyy tsentral'nyy nauchno-issle-  
dovatel'skiy institut kompleksnoy avtomatizatsii (State  
All-Union Scientific Central Research Institute of  
Comprehensive Automation)

PRESENTED: November 2, 1960, by P. S. Novikov, Academician

SUBMITTED: October 31, 1960

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37822

S/103/62/023/005/003/011  
D407/D301

6.9200

AUTHORS: Baburin, V.M., Matveyev, P.S., Rozhdestvenskiy, Yu.B.,  
and Sorkin, Yu.I. (Moscow)

TITLE: On calculating the distribution function of a random  
process from experimental data

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 5, 1962,  
571 - 580

TEXT: The error which arises in calculating the distribution function of a random stationary process, is estimated. Numerical results are obtained for the case of an exponential correlation-function. Criteria are obtained for testing the hypothesis of a normal distribution. Let  $F(x)$  denote the distribution function of the stationary random process  $\xi(t)$ . In the references, the following estimate is used for  $F(x)$ :

$$F_T(x) = T_x/T \quad (1)$$

where  $T_x$  is the total time during which  $\xi(t) \leq x$ . In the experimen-

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On calculating the distribution ...

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tal determination of  $F(x)$ , the total error is composed of the theoretical- and the instrument error. In the following, only the theoretical error is considered. The latter depends on the time  $T$ , on the number of points  $x_k$ , at which  $F_T(x)$  is calculated, and on their disposition. The mean-square error

$$\delta^2(x) = MF_T^2(x) - F^2(x) = M \left[ \frac{1}{T} \int_0^T \eta(t) dt \right]^2 - F^2(x) \quad (3)$$

is considered, where

$$\eta(t) = \eta_x(t) = \begin{cases} 1 & \text{for } \xi(t) \leq x \\ 0 & \text{for } \xi(t) > x \end{cases} \quad (4)$$

represents a new process. Denoting by  $R_\eta(\tau)$  the autocorrelation function of the process  $\eta(t)$ , and assuming that  $\xi(t)$  is a Gaussian process, it is possible to express  $F(x)$  in the form of a normal distribution function  $\Phi(x)$ . Further, the correlation function  $R_\eta(t)$  is calculated by the formula

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$$\delta^2(x) = \frac{2}{T} \int_0^T (1 - \frac{\tau}{T}) [R_{\tau}(\tau) - \Phi^2(x)] d\tau. \quad (22)$$

As an example, the case of an exponential correlation-function is considered:

$$\rho(\tau) = e^{-\gamma(\tau)}. \quad (24)$$

With  $T > 20$ , one obtains for the upper estimate of the error:

$$\varepsilon^2(x) = \frac{2\Delta\tau}{T} \sum_{i=0}^{16} [R_{\tau}(i\Delta\tau) - \Phi^2(x)]. \quad (26)$$

The results of the calculations are shown in the form of graphs (for  $T = 50, 100, 500$  and  $1000$ ). From the latter it is evident that the largest error occurs with  $x = 0$ ; then it decreases monotonically to  $x = 2$  approximately, and then increases again. Thus it is possible to solve the following two problems: 1) With a pre-assig-

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ned mean-square error  $\delta$  it is possible to determine the time  $T$  required, so that this error is not exceeded in calculating the distribution function. 2) Knowing  $T$ , it is possible to estimate the error  $\delta$ , which arises in determining the distribution function. Up to now it was assumed that  $x$  is fixed, i.e.  $F(x)$  is calculated at one point only. Further, the case is considered when  $F_T(x)$  is calculated at  $n$  points  $x_i$  ( $i = 1, 2, \dots, n$ ). The minimum number of points is determined, required for the construction of the distribution function. The steps involved in calculating  $F(x)$  are as follows: 1) The time  $T$  is selected in accordance with the required accuracy of  $\delta$  (by means of the graphs); thereby the correlation time  $\tau_c$  is determined either by the correlation function  $\delta(\tau)$ , which is more accurate, or by the frequency range (a rougher estimate). 2) The number of levels  $n$  is chosen in accordance with  $\delta$  and with the required maximum deviation  $\Delta_{\max}$  ( $\Delta_{\max} \leq (c + 2)\delta$ ). 3)  $F_T(x)$  is calculated by formula (1). 4) The normal-distribution hypothesis of the process  $\xi(t)$  is tested: if the calculated  $F_T(x)$  does not exceed

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the limits of a band of width  $2\Delta_{\max}$ , constructed according to the hypothetical distribution function, then the hypothesis agrees with observation; if  $F_T(x)$  leaves this band, the hypothesis is rejected.

Two numerical examples are given. There are 9 figures, and 10 references: 9 Soviet-bloc and 1 non-Soviet-bloc (in translation).

SUBMITTED: October 6, 1961

Card 5/5

ROMAKIN, Mikhail Ivanovich; SORKIN, Yu. I., dots., red.; SELIVERSTOVA,  
A. I., red. izd-va; YEZHOVA, L. L., tekhn. red.

[Fundamentals of linear algebra and linear programming] Ele-  
menty lineinoi algebry i lineinogo programmirovaniia. Moskva,  
Gos. izd-vo "Vysshiaia shkola," 1963. 277 p. (MIRA 16:3)  
(Algebra, Linear--Problems, exercises, etc.)  
(Linear programming)

SORKIN, Yu.I. (Moskva)

Theory of the defining relationships for automata. Probl. kib. no.9:  
45-69 '63. (MIRA 17:10)

MANTUHOV, Oleg Vasil'yevich; SOLNTSEV Yuriy Konstantinovich;  
GOR'KIN, Yuriy Isaakovich; FEDIN, Nikolay Georgiyevich;  
PUL'KIN, S.P., doktor fiz.-mat. nauk, retsenzent;  
KONDRAT'YEV, V.A., kand. fiz.-mat. nauk, retsenzent;  
MISHIN, V.I., kand. ped. nauk, retsenzent; VEYTSMAN,  
I.B., prepodavatel', retsenzent; KREYDLIN, Ye.G., pre-  
podavatel', retsenzent; PYSHKALO, A.M., prepodavatel',  
retsenzent; DITKIN, V.A., prof., red.; YAKOVKIN, M.V.,  
red.

[Explanatory dictionary of mathematical terms; textbook  
for teachers] Tolkovyi slovar' matematicheskikh terminov;  
posobie dlia uchitelei. Moskva, Prosveshchenie, 1965.  
539 p. (MIRA 18:7)

L 48830-65

EWT(1)/EWA(j)/EWA(b)-2 JK

ACCESSION NR: AP5008027

S/0016/65/000/003/0150/0150

AUTHOR: Sorkin, Yu. I.

TITLE: Some results on the use of a concentrated dry anthrax STI vaccine in the Far East

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 3, 1965, 150

TOPIC TAGS: human, anthrax, vaccination, anthrax dry vaccine, anthrax liquid vaccine, immunity, allergy

ABSTRACT: Reactivity and immuno-allergic indices for vaccination with a concentrated dry STI anthrax vaccine containing a considerably higher number of live spores than the generally used STI liquid vaccine were investigated. Two groups of 93 persons ages 17-55 yrs were vaccinated with each of the vaccines by skin scarification. After 24, 48, 72 hrs, 5 and 10 days the nature of the skin reactions to the vaccines was studied and evaluated by the amount of hyperemia and infiltrate formed at the injection site. The concentrated dry STI vaccine was found somewhat more reactive than the liquid STI

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ACCESSION NR: AP5008027

vaccine. The concentrated dry vaccine produced in some cases more pronounced and prolonged infiltration and hyperemia at the scarification site, but in no case did it increase body temperature or cause appreciable enlargement of underarm lymph glands. Allergic reactions of subjects were tested by a chemical anthraxin before vaccination and 57-61 days after vaccination. The number of positive skin reactions to the chemical anthraxin test was  $1\frac{1}{2}$  times higher in the group vaccinated with the concentrated dry STI vaccine than with the liquid STI vaccine. Orig. art. has: None.

ASSOCIATION: Irkutskiy protivochumnyy institut Sibiri i Dal'nego Vostoka (Irkutsk Antiplague Institute of Siberia and the Far East)

SUBMITTED: 00

ENCL.: 00

SUB CODE: LS

NR REF SOV: 000

OTHER: 000

Card 2/2

LIPKIN, M.Ye.; ARTYKOV, M.S.; ISAYEV, Yu.V.; LIL'YACH, I.A.; VAD'KINA, T.A.;  
SHILYAYEV, L.P.; PUNIKO, T.A.; ANDREYEVA, A.I.; PARNULINA, L.I.;  
ABRAMOVA, S.G.; KLIMOVA, T.K.; YEGOROV, V.A.; YEREMEYEV, P.I.; PABLOVA,  
M.B.; DASHEVSKIY, V.V.; SORKIN, Yu.I.; KOLENOVICH, A.I.; GREGORYEVA,  
L.I.; NAGAYEV, V.N.; NESTEROVA, G.N.; ALEKSEYEVA, S.A.; GUL'TEVA, V.M.;  
ANISIMOVA, T.I.; OVASAPYAN, O.V.; GALST'YAN, V.D.; ARAMINYAN, K.A.

Abstracts of articles received by the editors. Zhurn.kl.kl.kl.kl., 42 no.3:147-152 Mr '65. (MIRA 1816)

NIRK, Kholgi [Nirk, Holgi] (Avstraliya), SORKIN-FINKEL', L. [translator]

Interspecific hybrids of *Lycopersicon*. *Agrobiologiya* no.6:899-902  
N-D '60. (MIRA 13:12)

(Tomato breeding)

SORKINA, A. I.

Sorkina, A. I. "Surgical work in behind-the-lines evacuation hospitals,"  
Sbornik nauch. rabot evakogospitaley i Kafedry obshchey chirurgii (Irkut.  
obl. otdl zdravookhraneniya. Irkut. gos. med. in-t), (Irkutsk), 1948, p.  
3-19

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

SORKINA, A. I.

Sorkina, A. I. "Problems of pleural sepsis after bullet injuries of the chest," Sbornik nauch. rabot evakogospitaley i Kafedry obsichney chirurgii (Irkut. obl. otd. zdravookhraneniya. Irkut. gos. med. in-t), (Irkutsk), 1948, p. 43-48

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

SORKINA, A. I.

Sorkina, A. I. "Blood transfusion as per the material of evacuation hospitals  
behind the lines," Sbornik nauch. rabot evakogospitalov i Kafedry obshchey chirurgii  
(Irkut. obl. otd. zdravookhraneniya Irkut. gos.med. in-t), (Irkutsk), 1948, p. 135-48

SO: U-2888, Letopis Zhurnalnykh Statey, No. 1, 1949

SORKINA, A. I.

Sorkina, A. I., Tripolova, A. A. and Trukhmanov, B. G. "Treatment of poorly healing wounds of tissues with acid solutions," Sbornik nauch. rabot evakogospitaley i Kafedry obshchey chirurgii (Irkut. obl. otd. zdravookhraneniya. Irkut. gos. med. in-t), (Irkutsk), 1948, p. 163-68

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

SORKINA, A. I.

PA 1/50T65

USSR/Medicine - Literature  
Surgery

Aug 49

"Collected Scientific Works of the Evacuation Hospitals and Chair of General Surgery, Irkutsk State Medical Institute, Edited by A. I. Sorkina, 1948" 1/2 p

"Khirurgiya" No 8

The 21 articles, mostly on military field surgery include: articles on different forms of gunshot wounds by O. N. Zakhvalinskaya, E. M. Livshits, A. I. Sorkina, and I. L. Glezer; on the work of evacuation hospitals by A. I. Sorkina,

1/50T65

USSR/Medicine - Literature (Contd) Aug 49

O. N. Zakhvalinskaya, and I. L. Meyerovich; "Treatment of Poorly Healing Wounds of the Soft Tissues With Acid Solutions," by Sorkina, A. A. Tripolova and B. G. Trukhanov, and "Local Anesthesia With Alkali Solutions of Novocaine," by D. I. Dvordov.

1/50T65

SORKINA, A.I..

Survey of hydrometeorological conditions during the Odessa—  
Vladivostok passage in spring 1949. Trudy GOIN no.21:69-79 '52.  
(Hydrometeorology) (MIRA 11:3)

SORKINA, A.I.

Actinometrical observations during the Odessa -- Vladivostok passage  
in spring 1949. Trudy GOIN no.21:80-107 '52. (MIRA 11:3)  
(Meteorology--Observations) (Actinometer) (Pyranometer)

SORKINA, A.I.

Selection and generalization of synoptic data for preparing charts  
of wind fields over the seas. Trudy GOIN no.33:127-132 '56.

(MIRA 10:7)

(Oceanography) (Winds)

SOKHINA, A.I.

Fall is here... IUn.nat. no.10:7-8 O '57.  
(Autumn)

(MLRA 10:9)

SORKINA, A., kand. geogr. nauk

~~Winter.~~ IUn. mat. no. 12: 1-2 D '57.  
(Winter)

(MIRA 10:12)

SORKINA, A.I.; GRACHEVA, V.P.

Determining the properties of the thermal and turbulent regime of  
the atmosphere over the sea. Trudy GOIN no.38:26-33 '57.(MIRA 10:12)  
(Atmosphere)

SORKINA, A. I.

"The method of designing wind zone charts of the seas and oceans"

report presented at a Scientific Conference on Dynamic and Thermal Interaction of the Atmosphere and Hydrosphere, 26-29 Mar. 1958, Leningrad (Vest Ak nauk SSSR, 7, '58 pp. 128-29)

SORKINA, A.I.; KRYLOV, Yu.M., red.; TARKHUNOVA, V.I., red.; ZARKH, I.M., tekhn. red.

[Plotting wind-field maps for seas and oceans] Postroenie kart  
vetrovykh polei dlia morei i okeanov. Moskva, Gidrometeor.  
izd-vo, 1958. 73p. (Moscow. Gosudarstvennyi okeanograficheskii  
institut. Trudy, no. 44) (MIRA 11:12)  
(Meteorology, Maritime--Charts, diagrams, etc.) (Winds)

"Calculation of the Wind Field Over the Sea."  
Report submitted for the Int'l. Cong. New York City, 31 Aug - 11 Sep 1959.  
*Zemlyakov*

(Nat. Oceanographic Inst. Hydrometeorological Serv., USSR)



SORKINA, A.I.

Estimating the feasibility of calculating winds over the  
ocean by atmospheric pressure fields. Trudy GOIN no.48:95-  
103 '59. (MIRA 13:6)

(Atlantic Ocean--Winds)

SERKINA, A. I.

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PHASE I BOOK EXPLOITATION SOV/5729

1. *Glavnaya geofizicheskaya observatoriya.*

2. *Problemy klimatologii; sbornik statey (Problems in Applied Climatology; Collection of Articles)* Leningrad, Gidrometeoizdat, 1958. 100 p. Errata slip inserted. 1,050 copies printed.

3. *Issledovaniye* Agency: Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR. Glavnaya geofizicheskaya observatoriya im. A. I. Voytykova.

4. (Title page): F. F. Davitay, Doctor of Agricultural Sciences; Ed.: L. P. Zhdanova; Tech. Ed.: N. V. Volkov.

5. *Purpose:* This publication is intended for applied climatologists and planners in climate-dependent industries.

6. *Coverage:* This collection of 18 articles contains reports originally presented at the Conference on Applied Climatology in Leningrad in October 1958. The purpose of the conference was to summarize the results of research done in the field of applied climatology.

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... and to point the way for further investigations. In-  
cluded articles deal with general problems in applied climat-  
ology and special problems in engineering and industrial climat-  
ology, medical and health resort climatology, climatic energy,  
agriculture, and marine climatology. No personalities are mentioned.  
References follow individual articles.

LIST OF CONTENTS:

continued

GENERAL PROBLEMS

... G. A. [Glavnaya geofizicheskaya observatoriya im. A. I.  
Voyeykova -- Main Geophysical Observatory imeni A. I. Voyeykova].  
Spatial and Temporal Climatic Characteristics Required to Serve  
the Needs of the National Economy

... S. A. [Nauchno-issledovatel'skiy institut aeroklimat-  
ologii -- Scientific Research Institute of Aeroclimatology] On  
ward 2/7

Problems in Applied Climatology (Cont.)

304/5723

Yuzhnomorskaya (Black Sea) Steppe

149

PROBLEMS OF MARINE CLIMATOLOGY

Lebedev, A. I. [Gosudarstvennyy okeanologicheskii institut  
[State Oceanological Institute]. Use of Climatological Data  
for Characteristics of Wind-Generated Waves and Currents  
in the Seas and Oceans

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JA/dmm/jw  
11-13-61

SORKINA, A.I.

Some methodological problems in measuring winds at sea. Meteor. i  
gidrol. no.10:45-47 O '60. (MIRA 13:10)  
(Winds) (Meteorology, Maritime)

SOROKINA, M. I.

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PHASE I BOOK EXPLOITATION

SOV/4743

Moscow. Gosudarstvennyy okeanograficheskiy institut

Voprosy morskoy meteorologii (Problems in Marine Meteorology)  
Moscow, Gidrometeoizdat (Otd-niye), 1960. 68 p. (Series:  
Its: Trudy, vyp. 51) Errata slip inserted. 700 copies printed.

Sponsoring Agencies: Glavnoye upravleniye gidrometeorologicheskoy  
sluzhby pri Sovete Ministrov SSSR; Gosudarstvennyy  
okeanograficheskiy institut.

Ed. (Title page): G. M. Tauber; Ed. (Inside book): M. I. Sorokina;  
Tech. Ed.: I. M. Zarkh.

PURPOSE: This publication is intended for scientific research  
workers in physical oceanography and marine meteorology. It  
may also be useful to field workers of oceanographic expedi-  
tions and naval stations.

COVERAGE: This issue of the Transactions of the State Oceanographic  
Institute contains articles dealing with problems of the inter-  
action between the atmosphere and the ocean, as well as with

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methodological problems concerning the organization of meteorological observations on the sea. The issue was prepared for publication by A. D. Perlovskaya. References follow each article.

TABLE OF CONTENTS:

Introduction

4

Goptarev, N. P. The Influence of Dynamic and Thermal Factors on the Wind Velocity Above the Sea and on the Roughness of the Surface of the Sea

5

The author treats a number of problems of the physics of the air layer immediately overlying the sea surface. These problems are of great importance in determining wind velocity over the sea, and as a basic factor in calculating the elements of waves and the velocity of sea currents. The influence of the stratification of the atmosphere on turbulent exchange and on the character of the vertical profile of wind velocity is

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analyzed. The analysis leads to the following conclusions: (1) The effect of atmospheric circulation on turbulent exchange depends on the velocity of the air current. With an increase of wind velocity up to a certain critical degree, this effect increases. Should the wind velocity increase beyond the critical degree, its effect on turbulent exchange is diminished. The magnitude of the critical velocity depends upon the character and intensity of the stratification of air current. (2) The parameter of the roughness  $z_0$  of the sea surface should be regarded, not as a direct characteristic of the size of waves, but as a dynamic characteristic reflecting the interaction between the air current and the sea surface. This is demonstrated by the fact that the roughness diminishes as the height of waves increases and as the velocity of wave motion approaches that of the wind, i.e., as the dynamic conditions for the flow of the air current over the sea surface become more favorable, owing to the stabilization of the sea swell. The same is true

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of the dependence of roughness parameter on the stratification of atmosphere. An air current with unstable stratification affects the sea surface more than an air current with a stable and balanced stratification. Consequently, the height of the waves and the parameter of roughness are greatest under conditions of unstable stratification.

Sorkina, A. I. On the Accuracy of Wind Measurement  
on Ocean-Going Vessels

24

Prostyakov, S. M. Determination of Certain Qualita-  
tive Characteristics of Atmospheric Processes  
According to Synoptic Data

46

The author describes practical methods for cal-  
culating the following atmospheric processes from  
synoptic maps: mean geostrophic wind and its  
latitudinal and meridional components; mean di-  
vergence of the geostrophic wind velocity; mean  
advection of temperature with the given geostrophic

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wind and its kinetic energy. These characteristics are essential for the qualitative and quantitative evaluation of the effect of atmospheric factors upon changes in the properties of the surface layer of the ocean. The availability of certain basic data, taken from synoptic maps, is a prerequisite for the application of the described methods. Such data are: values of pressure and air temperature at the points of intersection of main meridians and parallels. In many cases the number of isobars crossing the corresponding sections of meridians and parallels can be substituted for pressure values at these points. Counting the number of such isobars is absolutely necessary for determining the kinetic energy of the geostrophic wind. Tables of coefficients, included in the article, considerably facilitate the calculation of qualitative characteristics in different zones in the range from 80 to 10° north latitude. The immediate purpose of the author's work was the investigation of atmospheric processes which, among other

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factors, determine the formation of thermal anomalies in the surface layer of the ocean. However, the proposed methods for calculating the qualitative characteristics may serve a broader purpose, since they can be used to solve a number of other meteorological problems.

AVAILABLE: Library of Congress

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JA/dwm/os  
3-21-61

SORKINA, A.I.

Maritime meteorology at the First International Oceanographic  
Congress. Okeanologiya 1 no.5:934-937 '61. (MIRA 15:3)  
(Meteorology, Maritime--Congresses)

SORKINA, A.I.

A survey of research on the establishment of types of atmospheric  
processes over oceans. Trudy GOIN no.61:159-168 '61.

(MIRA 14:10)

(Meteorology, Maritime)

SORKINA, A.I.; GOPTAREV, N.P.; KUCHEROV, N.V.

The technique of observing winds from the ship. Trudy GOIN  
no.61:199-207 '61. (MIRA 14:10)  
(Meteorology, Maritime) (Winds)

SORKINA, A.I.

Problems of maritime meteorology at the All-Union Meteorological  
Conference of 1961. Okeanologiya 2 no.1:188-189 '62. (MIRA 15:2)

(Meteorology, Maritime--Congresses)

40243

S/169/62/000/007/105/149  
D228/D307

3.5140

AUTHOR: Sorkina, A. I.

TITLE: Some features of the atmosphere's vertical structure  
in the tradewind zone of the Atlantic Ocean's nor-  
therly part

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 39-40,  
abstract 7B218 (Tr. Morsk. gidrofiz. in-ta AN SSSR,  
25, 1962, 69-81)

TEXT: The author analyzes the results of aerometeorologic observa-  
tions on the survey ship "M. Lomonosov" in the tradewind zone of  
the North Atlantic during October 1959, when the atmospheric pres-  
sure distribution was close to normal. Tradewinds (northerlies  
and easterlies), observed near the water surface in 89% of the ca-  
ses, change into winds of the horizon's western half with altitude.  
The prevalence of westerly transfer starts from a height of more  
than 7 km. There is no sharp boundary, however, and this 7 km-layer  
can only be provisionally reckoned as the thickness of the tradewind

X

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Some features of the ...

stream. The increase in the frequency of westerly winds with altitude, like the increase in the frequency of easterly winds, takes place evenly at all heights in the 12 km-layer subjected to sounding. With altitude the tradewind stream changes its direction from E-SE through E to E-NE above the layer of near-surface friction, while the upper westerly stream changes its direction from SW to W. Easterly winds are distinguished by the highest velocities below 7 km, westerlies having the highest speeds above this level. As a rule, the meridional component of transfer is considerably less than the zonal; hence the tradewind circulation mainly determines zonal and not interlatitudinal exchange. The northern component of tradewinds due to friction in the atmosphere's near-surface layer is observed only at the actual water surface. Above the layer of friction easterly transfer acquires a slight southerly component. Thus, transfer from the equator towards the pole in the same direction as in the layer 7 - 12 km prevails, too, in the layer 0 - 7 km. There is no compensation of tradewind meridional or zonal transfer by upper anti-tradewind currents. The 7 km-level is characterized by the fact that here the frequencies of easterly and westerly

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Some features of the ...

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D228/D307

winds become equal, while the magnitude of the resulting wind velocity reaches a minimum. Above 7 km the speed must grow rapidly. For the lower 2 - 3 km of the tradewind zone layers, where the normal fall in the temperature with altitude is disturbed (isotherms, layers with decreased vertical temperature gradients, more rarely inversions), are usually observed when there are winds with the northerly component throughout the layer of friction. This confirms the correctness of Flon's suggestion that inversions are mainly caused by the latitudinal effect, under whose influence the trade-wind stream has to diverge. The upper layers of air subside as a result of the divergence. In most cases unstable stratification in the lower layers corresponds to stable stratification at height. When the inversion layer's position is low, the wind's vertical profile is abnormal: the wind velocity at a height of 1 - 1.5 km is sometimes found to be less than on the ocean surface. During the expedition the tropopause was high, and ascents rarely reached its level. The tropopause was detected at a height of 16 km on two occasions and once at 13 km, when the temperature was -60 to -70°. The thermal contrast between the ocean surface and the tropopause on

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Some features of the ...

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D228/D307

these occasions reached 80 - 100°. In view of the high stability of atmospheric processes in the tropics the conclusions drawn can be reckoned to be valid for any ocean tradewind region. An exception is the inference that the boundary layer's height depends on the season, the area, and the peculiarities of separate years. 4 references. [Abstracter's note: Complete translation.]

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AM4007931

BOOK EXPLOITATION

S/

Sorkina, Anna Il'inichna

Types of atmospheric circulation and related wind fields over the Northern Pacific (Tipy\* atmosfernoy tsirkulyatsii i svyazanny\*kh s nay vetrovy\*kh poloy nad severnoy chast'yu Tikhogo okeana) Moscow, Gidrometeoizdat, 1963. 247 p. illus., biblio. Errata slip inserted. 800 copies printed. At head of title: Glavnoye upravleniye gidrometeorologicheskoy sluzhby\* pri Sovete Ministrov SSSR. Gosudarstvenny\*y okeanograficheskiy institut.

TOPIC TAGS: meteorology, atmospheric circulation, wind field, Pacific Ocean wind field, Pacific Ocean atmospheric circulation, synoptic meteorology

PURPOSE AND COVERAGE: This book is intended primarily for oceanographers but may also be useful to synoptic meteorologists and geographers interested in climatological studies. The author has analyzed daily synoptic data for the years 1899 to 1959 and on this basis has established the normal seasonal characteristics of atmospheric circulation over the Northern Pacific and distinguished

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particular features of synoptic processes for individual years. The author has also endeavored to define the recurrence and duration of the vital cycles of atmospheric processes during individual seasons and months of the year, the basic patterns of transformation of certain types of atmospheric circulation to other forms, and annual and secular variations in atmospheric circulation over the ocean. Tables and charts of synoptic processes over the Northern Pacific are presented in three appendices.

TABLE OF CONTENTS:

Introduction -- 3

Ch. I. Statement of the problem -- 5

Ch. II. Materials used and method of study -- 11

1. Materials used -- 11

2. Method of classifying synoptic processes -- 11

3. Method for computing the wind above the sea -- 16

4. Evaluation of the degree of accuracy of the adopted method of

wind computation -- 30

Card 2/5

SORKINA, A.I.

Basic features of the atmospheric circulation over the northern Pacific Ocean and changes in the circulation regime in the last half century. Okeanologia 3 no.3:378-383 '63. (MIRA 16:8)

1. Gosudarstvennyy okeanograficheskiy institut.  
(Pacific Ocean—Atmospheric turbulence)

BORKHIN, A.I.

Some characteristics of atmospheric circulation over the northern part  
of the Pacific Ocean during the fall and the period of interannual  
Geophysical Cooperation. Oceanolog 8 4 no.4000-015 '66

(MIRA 1970)

2. Gosudarstvennyy okeanograficheskiy institut.

SORKINA, A.I.

Basic traits of the atmospheric circulation over the northern part of the Atlantic Ocean and some of its characterisation in comparison with the circulation over the Pacific Ocean. Trudy GOIN no.77:10-118 '64. (MIRA 18:1)

SOPHINA 1.1.7

map of atmospheric circulation and wind fields over the northern  
part of the Atlantic Ocean. Trudy GON no. 24:5-131 '65.

(MIRA 18:10)

SORKINA, A.I.

Characteristics of the atmospheric circulation over the northern  
part of the Atlantic Ocean during the IGY and IGC. Okeanologiya  
5 no.4:614-616 '65. (MIRA 18:9)

L. Gosudarstvennyy okeanograficheskiy institut.

L 21207-66 ENT(1)/FCC GW

ACC NR: AP6011941

SOURCE CODE: UR/0213/65/005/006/0937/0939

AUTHOR: Sorkina, A. I.

ORG: State Oceanographic Institute, Moscow (Gosudarstvennyy okeanograficheskiy institut)

TITLE: Some features of the unity of processes of atmospheric circulation over the oceans in the northern hemisphere

SOURCE: Okeanologiya, v. 5, no. 6, 1965, 937-939

TOPIC TAGS: atmospheric circulation, synoptic meteorology, oceanology

ABSTRACT: This study was based on data for 1899-1939 and 1954-1959 for the Atlantic and Pacific Ocean for five principal types of synoptic processes. Analysis of curves of the changes of the values of anomalies from month to month for the two oceans revealed that there is a rather clearly expressed dependence between the time of onset of the extrema of monthly anomalies in the Atlantic and Pacific Oceans. A large part (approximately 75%) of all the extrema of anomalies in one of the oceans is accompanied by extrema of anomalies of the same sign in the other ocean as well, displaced in time by not more than one month. The relationship between the time of onset of the extrema in the two oceans becomes closer with an increase of their intensity. For example, the extrema of the monthly anomalies of the frequency of different groups of processes with a duration of  $\geq 20$ ,  $\approx 30$  and 40% of the month are accompanied in

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UDC: 551.465.71: 551.513(26)

L 21207-66

ACC NR: AP6011941

the other ocean by extrema of the same sign, displaced in time up to one month in 80, 90 and 96-99% of the cases. In approximately 60% of the cases the largest extrema coincide in time with the extrema of the other ocean. Extrema of anomalies which do not occur simultaneously in both oceans occur first most frequently in the Atlantic Ocean and then extend to the Pacific. This is true by a factor of 1.3-1.5.

These and other facts demonstrate that the processes of atmospheric circulation over the northern parts of the Atlantic and Pacific Oceans develop in direct relationship to one another and not in isolation. The tendency of these processes to change in the same phase is evidence that to a considerable degree they are determined by the influence of some factor of a planetary scale. [JPRS]

SUB CODE: 04, 08 / SUBM DATE: 24Feb65 / ORIG REF: 002

*FW*  
Card 2/2.

ACC NR: AT0021084

(N)

SOURCE CODE: UR/2531/00/000/100/0000/0088

AUTHOR: Sorkina, A. I.

ORG: None

TITLE: On the correlation of synoptic processes in the northern regions of the Atlantic and Pacific oceans

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 198, 1966. Voprosy obshchey i sinopticheskoy klimatologii (Problems of general and synoptic climatology), 53-88

TOPIC TAGS: climatology, atmospheric circulation, synoptic process, synoptic process correlation

ABSTRACT: Author notes the recent trend in climatology from disconnected regional investigations toward studies of the laws of simultaneous development of atmospheric circulation processes in various large regions of the Earth. The paper considers the problem of synoptic processes correlations over the oceans of the Northern Hemisphere. The foundation for this work was laid by the State Oceanographic Institute at the completion of a study of atmospheric circulation of the northern parts of the Atlantic and Pacific oceans. Simultaneously recorded synoptic data in these two oceans became available in 1964, for a 47-year period (more exactly - corresponding data for 545 months). For each of these oceans, calendars of repeatability of the characteristic circulation

Cord 1/2

ACC NR: AT0021084

types were compiled, and monthly magnitudes of the average long term normal types repeatability for these types calculated. The various circulation types were then grouped for further processing into five basic process types applicable for both oceans, as follows: 1) formation of subtropical anticyclones; 2) initial stages of subtropic cyclone weakening; 3) anticyclone dismemberment and meridional interpenetration by cyclones; 4) formation of central depressions; 5) arctic air invasions. The paper presents monthly anomalies of repeatability of these similar synoptic groups over the northern parts of the Atlantic and the Pacific oceans. The investigation of the time of birth of anomaly extrema, and of the signs of the anomaly intensity changes from month to month for a period of a half-century showed that the processes of the atmospheric circulation over the Atlantic and Pacific oceans have a tendency to develop in phase.

SUB CODE: 04 / SUBM DATE: 00/ ORIG REF: 010

Card 2/2

SORKINA, A.I.; GORBIN, G.B.

Late results of operative treatment of a serious form of hyperparathyroid osteodystrophy with calcareous metastases. Probl. endok. i gorm. 11 no.1:58-60 Ja-F '65.

(MIRA 18:5'

1. Kafedra obshchey khirurgii (zav. - prof. A.I. Sorkina) Irkutskogo meditsinskogo instituta na baze gorodskoy klinicheskoy bol'nitsy (glavnyy vrach A.F. Demidova).

SORKINA, D.A.

Origin of alpha and beta globulins of the blood. Ukr. biokhim.  
zhur. 32 no.5:669-677 '60. (MIRA 14:1)

1. Kafedra biokhimii Krymskogo meditsinskogo instituta, Simferopol'.  
(GLOBULIN)

TROITSKIY, G.V.; OKULOV, V.I.; SORKINA, D.A.

Possible transformation of the blood plasma albumin and  $\gamma$ -globulin  
into  $\alpha$ - and  $\beta$ -globulins. Biokhimiia 26 no. 1:44-56 Ja-F '61.  
(MIRA 14:2)

1. Chair of Biological Chemistry, the Crimean Medical Institute,  
Simferopol'.

(BLOOD PROTEINS)

1. A. A. KATZ, G. I. (S. A.)

"Isolation of Substances Causing  $\alpha$ - and  $\beta$ -Clotting of the  
Plasma Proteins of the Heart from Perfusate of the Functioning  
Heart."

Report presented at the 5th Int'l. Biochemistry Congress,  
Moscow, 10-15 Aug 1961.

SORKINA, D.A.; YEFIMENKO, A.M.

Necessity of standardizing the method of paper electrophoresis.  
Lab.delo 9 no.3:3-7 Mr '63. (MIRA 16:4)

1. Krymskoye obshchestvo biokhimikov, Simferopol'.  
(PAPER ELECTROPHORESIS)

SORKINA, D.A.

Heart perfusate components causing alpha-and beta-globulinization  
of blood proteins. Biokhimiia 28 no.4:589-594 Ji-Ag '63.  
(MIRA 18:3)

1. Kafedra biologicheskoy khimii Krymskogo meditsinskogo  
instituta, Simferopol'.

SORKINA, D.A. (Simferopol')

Blood protein restoration after blood loss in experimental  
nephritis. Pat. fiziol. eksp. ter. 7 no.5:49-53 S-0163  
(MIRA 17:2)

1. Iz kafedry biologicheskoy khimii ( zav. - prof. G.V.  
Troitskiy Krymskogo meditsinskogo instituta.

Schmidt, J. W.

Synthesis of flow proteins. Int. J. Chem. Zool. 30 no. 1:150- 57  
16a. (1976 17:11)

POKHANOV, G.A., POLITSKIY, I.V.

Investigation of changes in serum proteins in septic inflammation  
by free electrophoresis and separation on DEAE-sephadex. Vop.  
vopr. khim. 11 no.4:48-55 61-Az '65. (MIRA 1968)

1. Kafedra biologicheskoy khimii Krymskogo meditsinskogo  
instituta, Simferopol'.

DUNKIN, G. L.

Sebaceous Glands - Diseases

Result of treating seborrhea with short ultraviolet rays, Vest. ven. i derm., No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress October 1952 UNCLASSIFIED

EXCERPTA MEDICA Sec 13 Vol 13/10 Dermatology Oct 59

2751. UV RADIATION THERAPY AND ADHESIVE PLASTER IN THE TREATMENT OF SKIN DISEASES (Russian text) - Sorkina D. U. - VESTN. DERM. I VENER. 1958, 32/5 (60-62) Tables 1 Illus. 1

230 cases of eczema, eczematoid, neurodermitis, streptococcal skin infections, trophic ulcers and secondarily infected ringworm were treated by UV rays followed by application of adhesive plaster. The plaster should cover the whole patch and be changed every 3-7 days. The dosage of the UV rays equals 6-8 biadoses. The best therapeutic results were achieved in the cases of eczema and eczematoid (85% cases cured or improved). Relapses, which occurred in 40% of the cases in the period of 2 weeks to 4 months, were treated successfully again in the same way. The cases of neurodermitis improved in 70%, and trophic ulcers improved in 20 cases out of the 36 treated.

Kraus - Hradec Králové

BUNATYAN, Ye.A.; SORKINA, E.G. (Moskva)

Evaluation of the disorders of rhythmic movements in tumors of the  
right premotor zone. Vop. neirokhir. 27 no.5:43-48 S-O '63.  
(MIRA 17:5)

1. Nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znameni  
institut neyrokhirurgii imeni N.N. Burdenko (dir. - prof. B.G.  
Yegorov) AMN SSSR.

L 31330-65

ACCESSION NR: AP4046058

S/0245/64/000/005/0122/0126

AUTHOR: Artem'yeva, Ye. Yu.; Meshalkin, L. D.; Morozova, I. V.;  
Sorkina, E. G.; Khomskaya, Ye. D.

TITLE: Experimental use of nonparametric static methods in  
analyzing curves for recorded eye movements

SOURCE: Voprosy\* psikhologii, no. 5, 1964, 122-126

TOPIC TAGS: human, eye, eye movement recording, nonstatistical  
analysis, brain injury diagnosis

ABSTRACT: A nonstatistical method of analyzing eye movement curve  
data has been developed to improve brain injury diagnosis. Photo-  
electric recordings of eye movements for 14 patients with injuries of  
the frontal lobe (premotor area), 17 patients with localized injuries  
of the parietal and occipital lobes, and 10 healthy persons were  
extensively analyzed. On the basis of the analysis data, three  
indices were selected for brain injury diagnosis: 1) degree of  
"independent" eye movement normalcy, 2) difference between the  
maximum frequencies of "independent" and "tracking" eye movements,

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L 31330-65

ACCESSION NR: AP4046058

and 3) nature of slow "tracking" eye movements. "Independent" eye movements were determined by the subject's eye movement frequency in shifting his eyes between two points (30° apart) upon verbal instruction. "Tracking" eye movements were determined by the subject's eye movement frequency in tracking a spot of light moving in a horizontal plane from left to right and back again. A rating scale ranging from 1 to 5 was worked out to facilitate evaluation of each index. Typical eye movement patterns served as standards for the rating scale (see enclosures 01 and 02). A patient's eye movement curves can be evaluated in less than 20 min by this method. Tabulation of index ratings for all investigated subjects showed that 12 of the 14 patients with injuries of the premotor area had the same rating of "3" for degree of "independent" eye movement normalcy. Other brain injuries also appear to be characterized by specific index ratings. The validity of these findings was confirmed by evaluating eye movement curves for 14 new subjects. The improvement of local brain injury diagnosis by a nonstatistical analysis of eye movements appears feasible. Orig. art. has: 5 figures.

Card 2/5

L 21330-65  
ACCESSION NR: AP4046058

ASSOCIATION: Otdeleniye psikhologii Moskovskogo universiteta  
(Psychology Department, Moscow University)

SUBMITTED: 00

ENCL: 02

SUB CODE: LS, PH

NR REF SOV: 005

OTHER: 001

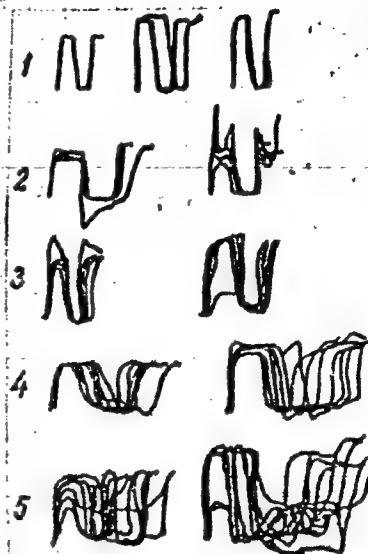
Card 3/5

L 31330-65

ACCESSION NR: AP4046058

ENCLOSURE: 01

Fig. 1. Typical mean patterns  
for "independent" eye movements  
(numbers indicate scale ratings).

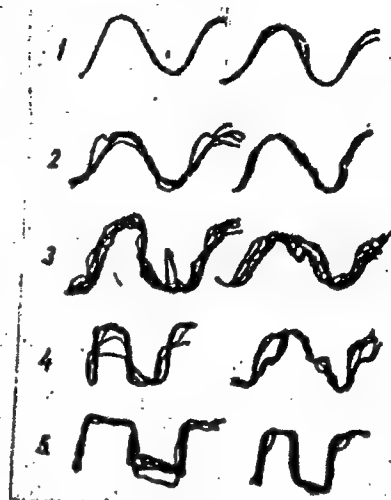


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L 31330-65  
ACCESSION NR: AP4046058

ENCLOSURE: 02

Fig. 4. Standard scale for  
rating "tracking" eye movements  
by number.



Card 5/5

TABIBOV, G.A.; KOK, Ye.P.; SORKINA, E.G.

Functional disorders of the temporal lobe in parasagittal  
arachnoid endotheliomas. Vop. neirokhir. 28 no.2:37-40  
Mr-Apr '64. (MIRA 18:2)

1. Nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znameni  
institut neyrokhirurgii imeni N.N. Burdenko (direktor - prof.  
B.G. Yegorov) AMN SSSR, Moskva.

Children - Diseases

Clinical aspects of early primary tuberculosis in school children. Probl. tub.  
no. 3, 1954.

9. Monthly List of Russian Accessions, Library of Congress, November 1957, Uncl.

2

*SORKINA E.Z.,*

KUDRYAVTSEVA, A.I., professor; SORKINA, E.Z., kandidat meditsynskikh nauk  
(Moskva)

Early symptoms of tuberculosis in childhood and adolescence. Sov.  
med. 18 no.9:7-10 S '54. (MLRA 7:11)

(TUBERCULOSIS, diagnosis  
early sympt. in child. & adolescents)

*Comments - K-3280, 14 Mar 55*

SORKINA, E.Z., doktor meditsinskikh nauk.

Early detection of tuberculosis in children. Trudy Inst. tub. AMN  
7:109-124 '58. (MIRA 13:10)

(TUBERCULOSIS—DIAGNOSIS)

POMEL'TSOV, K.V., prof.; SORKINA, E.Z., doktor meditsinskikh nauk

Specific allergy and body reactivity in children infected with  
tuberculosis. Trudy Inst. tub. AMN 7:125-132 '58. (MIRA 13:10)  
(TUBERCULIN) (TUBERCULOSIS)

SORKINA, Ella Zinov'yevna

[Primary tuberculosis infection in children] Pervichnaya  
tuberkuleznaya infektsiya u detei. Moskva, Medgiz, 1960.  
159 p. (MIRA 14:2)  
(TUBERCULOSIS)

ARKHIPOVA, O.P., kand. biol. nauk; BERLII, P.Yu., prof.; VOROB'YEV, S.I.,  
kand. med. nauk; ZASLAVSKIY, I.D., kand. med. nauk; KUDRYAVTSEVA,  
A.I., prof.[deceased]; LAPINA, A.I.; MARKUZON, V.D., prof.; MASSINO,  
S.V., prof.; NEZLIN, S.Ye., prof.; OYFEBAKH, M.I., prof.; POMEL'TSOV,  
K.V., prof.; RABUKHIN, A.Ye., zasl. deyatel' nauki RSFSR, prov.;  
ROL'YE, Z.Yu., zasl. deyatel' nauki RSFSR, prof.; SORKINA, E.Z.,  
doktor med. nauk; FILIMONOV, N.I., kand. med. nauk [deceased];  
YUSKOVETS, M.K., zasl. deyatel' nauki Belorusskoy SSR, prof., akademik;  
EYNIS, V.L., zasl. deyatel' nauki RSFSR, prof., otv. red.;  
LYUDKOVSKAYA, N.I., tekhn. red.

[Multivolume manual on tuberculosis] Mnogotomnoe rukovodstvo po  
tuberkulezu. Otv. red. V.L.Einis. Moskva, Medgiz. Vol.4.  
[Epidemiology and the organization of the control of tuberculosis]  
Epidemiologiya i organizatsiya bor'by s tuberkulezom. Red. toma  
A.I.Lapina i S.V.Massino. 1962. 524 p. (MIRA 15:6)

1. Akademiya nauk Belorusskoy SSSR i Akademiya sel'skokhozyaystven-  
nykh nauk Belorusskoy SSSR (for Yuskovets).  
(TUBERCULOSIS)

ZAVARSKAYA, I.P.; SORKINA, E.Z., doktor med. nauk

Result of a polupation examination for tuberculosis. Probl.  
tub. no.8:12-16 '62. (MIRA 16:9)

1. Iz TSentral'nogo intituta tuberkuleza (dir. - deystvitel'-  
nyy cheln AMN SSSR prof. N.A. Shmelev) Ministerstva zdravo-  
okhraneniya SSSR, Moskva.  
(TUBERCULOSIS)

SOPKINA, E.Z.

Early detection of tuberculosis among children and adolescents.  
Zdrav.Tadzh. 9 no.5:3-8 '62. (MIRA 15:12)

1. Zav. kafedroy detskogo tuberkuleza Tadjhikskogo meditsinskogo  
instituta imeni Abuali ibni Sino.  
(TUBERCULOSIS)

14001-61 EPR/EPF(J)/EPF(c)/EWT(m)/BDS AFFTC/ASD Pg-4/Pc-4/r-4 RM/WW  
ACCESSION NR: AP3001592 S/0138/63/000/005/0011/0013 76

AUTHOR: Livshits, I. A.; Reikh, V. N.; Salnis, K. Yu.; Sorkina, F. M. 73

TITLE: Properties of chlorinated copolymers of ethylene with propylene

SOURCE: Kauchuk i rezina, no. 5, 1963, 11-13

TOPIC TAGS: functional group, high-molecular elastomer, chlorinated copolymer, ethylene-propylene copolymer

ABSTRACT: In the present study the method of catalytic chlorination of ethylene-propylene copolymers was used to obtain materials with a chlorine content of 5.1, 7.9, and 11.0%. These were subjected to various tests, which showed that an increase in chlorine brought about a doubling in hardness, a rise of the vitrification temperature from -55 to -39C, a near doubling of the modulus at a 300% elongation. Lower values were found in the specific elongation, the residual elongation, and in rebound resilience at 20C, while the resistance to tear remained practically unchanged. In a second series of tests, the properties of chlorinated ethylene-propylene copolymers with a 7.5-7.9% chlorine content, with and without reinforcing fillers, were compared with those of a non-chlorinated ethylene-propylene copolymer. The filled vulcanizates from

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L 12693-63  
ACCESSION NR: AP3001592

chlorinated ethylene-propylene copolymer<sup>b</sup> showed a lower modulus and higher specific and residual elongations, while possessing a substantially higher resistance to abrasion and to tear at room temperature. There was no difference in rebound resilience at 20 and 100C. E. R. Dolinskaya participated in the experimental work. Orig. art. has: 3 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber)

SUBMITTED: 00

DATE ACQ: 08Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 002

OTHER: 003

Card 2/2

KUCHENMANN, D.; WEBER, J.; BORISENKO, V.M. [translator]; YELISSEYVA, Yu.B.  
[translator]; SORKINA, L.I. [translator]; EL'PERINA, I.S. [translator];  
MEL'NIKOV, D.A., redaktor; DANILOV, I.Ya., redaktor; KLIMENKO, S.V.,  
tekhnicheskii redaktor

[Aerodynamics of propulsion. Translated from the English] Aerodinamika  
aviatsionnykh dvigatelei. Perevod s angliiskogo V.M.Borisenko i dr.  
Pod red. D.A.Mel'nikova. Moskva, Izd-vo inostrannoi lit-ry, 1956.  
388 p. (MLBA 10:2)

(Aerodynamics) (Airplanes--Motors)

USSR/Cultivated Plants - Grains

M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53552

Author : Sorkina, N.P.

Inst : Stalingrad State Agricultural Experimental Station

Title : Methods of Increasing the Effectiveness of Fertilizers

Orig Pub : Dyul. nauchn. inform. Stalingr. gos. s.-kh. opyt. st.,  
1956, No 1, 19-20

Abstract : On the basis of experiments conducted in 1950-1955, the Stalingrad Agricultural Experimental Station recommends placing granular fertilizers under the spring grain crops into the rows together with the seeds. Such introduction of fertilizers stimulates the activity of the microflora of the wheat rhizosphere and increases the yield.

Card 1/1

5.3400

78253  
SOV/79-30-3-7/69

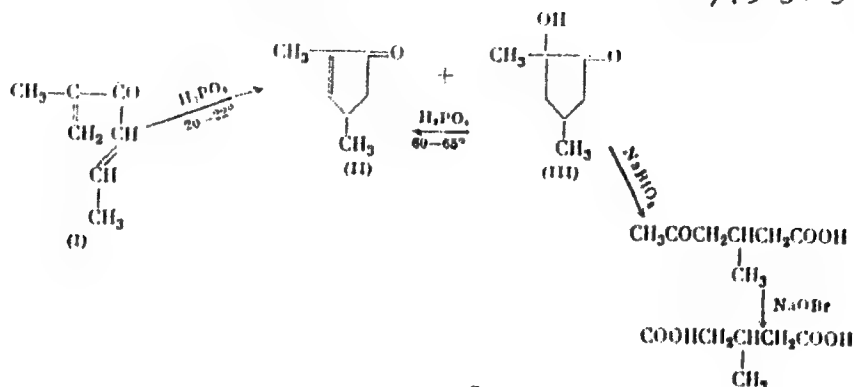
AUTHORS: Nazarov, I. N., Zaretskaya, I. I., Sorkina, T. I.  
TITLE: The Formation of Cyclopentanones on Cyclization  
of Divinyl Ketones  
PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 3, pp  
746-753 (USSR)  
ABSTRACT: Propenyl isopropenyl ketone (I) on treatment with  
 $H_3PO_4$  at room temperature was cyclized into  
2,4-dimethyl-2-cyclopenten-1-one (II) which was  
simultaneously hydrated to 2,4-dimethyl-2-cyclopentan-  
ol-1-one (III; yield 15-20%; mp 34-35° C).

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The Formation of Cyclopentanones on  
Cyclization of Divinyl Ketones

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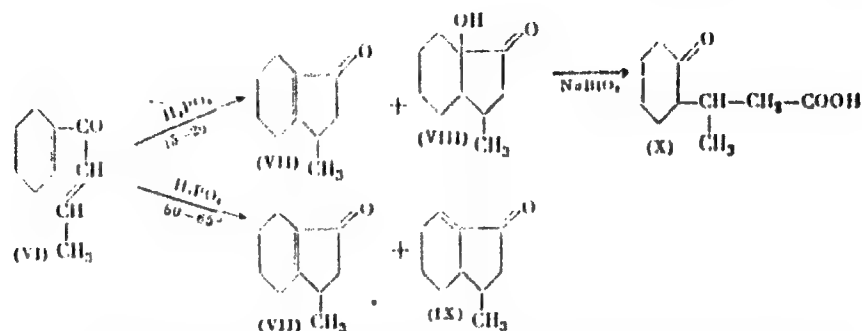
Similarly, propenyl  $\Delta^1$ -cyclohexenyl ketone (VI) gave 1-methyl-4,5,6,7-tetrahydroindan-3-one (VII) which was hydrated partially to 1-methylhexahydroindan-9-ol-3-one (VIII; yield 10%; mp 71-72° C, from Isooctane).

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The Formation of Cyclopentanones on  
Cyclization of Divinyl Ketones

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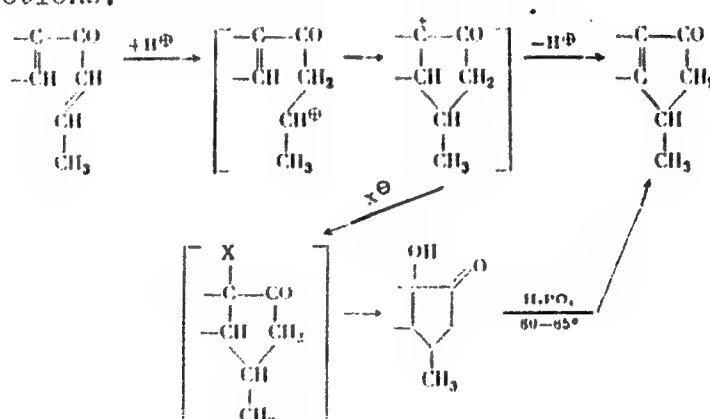
The structure of (III) was confirmed further by oxidation with sodium bismuthate to 3-methyl-4-acetylbutyric acid, which on oxidation with  $NaOBr$  gave  $\beta$ -methylglutaric acid. Cyclization of (VI) with  $H_3PO_4$  at 60-65° C gave a mixture of hydroindans (VII) and (IX). The oxidation of (VIII) with  $NaBiO_3$  gave the keto acid (X). Considering the experimental

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data, the course of divinyl ketone cyclization to cyclopentenones, and the hydration of the latter to cyclopentanones can be explained by the following reactions:



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TOP SECRET  
Reference

75.214  
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USSR (Institut organicheskoy khimii Akademii nauk  
SSSR)

SUBMITTED: February 20, 1959

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